NON-PUBLIC?: N
ACCESSION #: 9302110323
LICENSEE EVENT REPORT (LER)

FACILITY NAME: South Texas, Unit 1 PAGE: 1 OF 05

DOCKET NUMBER: 05000498

TITLE: Reactor Trip Due to Failure to Follow Procedures During
RCS Flow Transmitter Restoration
EVENT DATE: 03/14/92 LER #: 92-03-01 REPORT DATE:

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Charles Ayala - Supervising TELEPHONE: (512) 972-8628
Licensing Engineer

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On March 14, 1992, Unit 1 was in Mode 1 at 100% power. A reactor trip occurred at approximately 1108 hours from a momentary false reactor coolant low flow trip signal. Instrumentation & Control Technicians calibrating the Reactor Coolant flow transmitter reversed the procedural sequence of restoring the transmitter causing a momentary low (below setpoint) differential pressure to be detected by the two adjacent flow transmitters. This event completed the logic in the Solid State Protection System to trip the reactor. The cause of this event was failure to follow procedures which resulted from insufficient supervisory and management emphasis on the risk associated with the task, and a limited sense of responsibility by the technicians to ensure proper task completion. The actions taken to correct the event are: supervision is required to be present to ensure emphasis is placed on completing the activity correctly when a potential reactor trip could occur; clear

direction for use and physical presence of procedures has been provided to maintenance craftsmen; and a memorandum from management was issued emphasizing the self-checking principle.

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END OF ABSTRACT

DESCRIPTION OF EVENT:

On March 14, 1992, Unit 1 was in Mode 1 at 100 percent power. A reactor trip occurred at approximately 1108 hours from a momentary false reactor coolant low flow trip signal. At that time, Instrumentation and Control Technicians were calibrating a flow transmitter for Reactor Coolant Flow Loop 2 Protection Set 2. The work document to perform the calibration was initiated on March 13, 1992, due to an evaluation of the previous two transmitter data and channel comparisons rendering the transmitter calibration suspect. The work document instructions directed the technicians to use a surveillance procedure. The transmitter was removed from service and as found data was recorded. An adjustment was made to the transmitter to bring it within tolerance. While returning the transmitter to service, the transmitters high pressure side valve was opened first instead of the low pressure side valve to pressurize the transmitter which was contrary to the procedure. A momentary low (below setpoint) differential pressure was detected by two adjacent flow transmitters. This completed the two-out-of-three coincidence logic in the Solid State Protection System and with the Nuclear Instrumentation System permissive P-8 being satisfied (Reactor Power above 40% Power), the reactor tripped on reactor coolant low flow. Seconds later, the auxiliary feedwater pumps actuated on Steam Generator Lo-Lo Level signal which opens the auxiliary feedwater throttle valve for steam driven auxiliary feedwater (AFW) pump 1D.

Following this event, the auxiliary feedwater throttle valve reactuated to the open position when the valve was closed. The ESF actuation was caused by the steam generator (SG) two of four Lo-Lo Level signal which had not been reset. The valve was then reclosed after SG Lo-Lo Level signal was reset securing steam driven AFW pump 1D. The plant was stabilized in Mode 3. The main steam isolation valves were closed to limit Reactor Coolant System cooldown. The NRC was notified on March 14, 1992 at 1327 hours.

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DESCRIPTION OF EVENT: (Con't)

The three transmitters, that measure reactor coolant flow, are connected to the process line by a common tap on the high pressure side. This is a unique piping arrangement. The opening of the high pressure valve first results in the two adjacent flow transmitters momentarily supplying the pressure needed to pressurize the transmitter being returned to service. A momentary pressure drop of approximately three pounds per square inch is all that is required to exceed the differential pressure setpoint.

CAUSE OF EVENT:

The cause of this event was failure to follow procedures which resulted from insufficient supervisory and management emphasis on the risk associated with the task, and a limited sense of responsibility by the technicians to ensure proper task completion. In addition, management controls over procedure usage were not clearly stated resulting in confusion over requirements for having procedures present during task performance.

The technician in the Reactor Containment Building (RCB) performing the work to return the transmitter to service did not have a copy of the procedure in his possession, but rather was following verbal instructions from a technician in the relay rack area of the Electrical Auxiliary Building who did possess the procedure. The technician providing verbal direction failed to read and communicate specific steps for return to service. The technician in the RCB valved in the flow transmitter in the reverse order.

The auxiliary feedwater throttle valve reactuation was caused by the operator prematurely repositioning the valve to the closed position prior to the resetting of SG Lo-Lo Level signal.

ANALYSIS OF EVENT:

The event is reportable pursuant to 10CFR50.73(a)(2)(iv). There were no adverse radiological or safety consequences as a result of this event. Engineered Safety Systems functioned as designed and no unexpected post-trip transients occurred except for the second ESF actuation of the auxiliary feedwater throttle valve. The valve actuation had no impact on plant safety since the valve open status is its safety function position.

CORRECTIVE ACTIONS:

1. Shift and Unit supervisors were briefed to emphasize that they will be held accountable for taking conservative action, including power reduction or other actions that will increase the safety margin and/or reduce the risk of a plant transient or trip when evaluating the safety impact of work or testing and to monitor these activities to ensure that they are controlled.

2. Plant Management has established a reactor trip prevention policy which adds administrative controls to work activities that have a potential to cause a reactor trip. These activities are required to be under direct control of an on-the-scene supervisory individual to ensure the job is completed correctly and within safety margins.

3. A Maintenance Department Standing Order was issued requiring that performers of a procedure will have a copy of the procedure or, at the minimum, a copy of the portion of the procedure that is to be performed by those personnel who are working at locations other than where the controlling procedure is maintained.

4. Department training sessions were conducted for appropriate maintenance personnel. The session discussed the lessons learned from this event.

5. Management has issued a memorandum to emphasize the importance of the self-checking principle and to request line management to reinforce these principles with their personnel.

6. Nuclear Training will include this event in the Licensed Operator Initial Training and Licensed Operator Requalification Training to stress the need to reset the SG Lo-Lo Level signals prior to securing the auxiliary feedwater throttle valve. Training will also discuss the generic implications of ensuring ESF signals are reset prior to returning ESF components to normal to prevent unnecessary actuations of ESF components. This action will be completed by July 16, 1993.

ADDITIONAL INFORMATION:

Similar events have been reported regarding reactor trips due to failure

to follow procedure which are LER 89
011 (Unit 2) "Inadvertent Safety
Injection and Reactor Trip System Actuations Due to Personnel Error," LER
90-013 (Unit 2) "Reactor Trip Caused by Manipulation of the Incorrect
Reactor Trip Breaker Test Pushbutton" and LER 91-022 (Unit 1) "Reactor Trip
During Performance of SSPS Logic Functional Test".

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ATTACHMENT 1 TO 9302110323 PAGE 1 OF 2

The Light
company

Houston Lighting & Power

South Texas Project Electric Generating Station
P. O. Box 289 Wadsworth, Texas 77483

February 5, 1993
ST-HL-AE-4320
File No.: G26
10CFR50.73

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project
Unit 1
Docket No. STN 50-498
Revision 1 to Licensee Event Report 92-003
Reactor Trip Due to Failure to Follow
Procedures During RCS Flow Transmitter Restoration

Pursuant to 10CFR50.73, Houston Lighting & Power (HL&P) submits the attached Licensee Event Report 92-003 regarding a reactor trip due to failure to follow procedures during RCS flow transmitter restoration. This event did not have adverse impact on the health and safety of the public.

This revision addresses a second Engineered Safety Features actuation that occurred at the time of this event. An additional corrective action has been added. Changes are indicated by change bars.

If you should have any questions on this matter, please contact Mr. C. A. Ayala at (512) 972-8628 or me at (512) 972-7921.

W. H. Kinsey, Jr.
Vice President,
Nuclear Generation

MAC/sr

Attachment: LER 92-003 Revision 1 (South Texas, Unit 1)

LER\93022001.U1

A Subsidiary of Houston Industries Incorporated

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Revised 02/03/92

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